

ABSTRACT OF THE DISCLOSURE

Methods relating to forming interconnects through injection of conductive materials, to fabricating semiconductor component assemblies, and to resulting assemblies. A semiconductor component substrate, such as a semiconductor die or other substrate, has dielectric material disposed on a surface thereof, surrounding but not covering interconnect elements, such as bond pads, on that surface. A second semiconductor component substrate, such as a carrier substrate with interconnect elements such as terminal pads, is adhered to the first semiconductor component substrate, forming a semiconductor package assembly having interconnect voids between the corresponding interconnect elements. A flowable conductive material is then injected into each interconnect void using an injection needle that passes through one of the substrates into the interconnect void, forming a conductive interconnect between the bond pads and terminal pads of the substrates. In another embodiment, a conductive material is preplaced into the interconnect voids and ultrasonically heated to a flowable state.